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a material holder holding a holographic recording material having elemental holograms;

an object beam unit, including a removable band-limited diffuser, for displaying a rendered image and for conditioning the object beam with the rendered image to interfere with the reference beam at a chosen elemental hologram, wherein the removable band-limited diffuser includes a deterministic phase pattern designed to diffuse light in at least one of a specific pattern and a specific direction;

a removable masking plate located in the path of the reference beam and proximate to the holographic recording material; and

a computer programmed to control the interference of the object beam and the reference beam and the delivery of the rendered image to the object beam unit.

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39. (Amended) An apparatus for printing holographic stereograms, comprising:

a light source that produces a coherent beam;

a beam splitter that splits the coherent beam into an object beam and a reference beam;

a material holder holding a holographic recording material having elemental holograms;

an object beam unit for displaying a rendered image and for conditioning the object beam with the rendered image to interfere with the reference beam at a chosen elemental hologram;

a voxel-control lens located in the path of the object beam and proximate to the holographic recording material, the voxel control lens being capable of varying the size of at least one voxel and being capable of making the rendered image displayed by the object beam unit as seen from the viewpoint of an elemental hologram appear at a greater apparent distance relative to the holographic recording material; and

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a computer programmed to control the interference of the object beam and the reference beam and the delivery of the rendered image to the object beam unit.

57. (Amended) A method of printing a holographic stereogram with elemental holograms, comprising the steps of:

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selecting an elemental hologram;  
 generating a coherent light beam;  
 splitting the beam into an object beam and a reference beam;  
 rendering an image;  
 conditioning the object beam with the rendered image, the conditioning of the object beam including the step of passing the object beam through a voxel-control lens, the voxel control lens being capable of varying the size of at least one voxel and being capable of making the rendered image as seen from the viewpoint of an elemental hologram appear at a greater apparent distance relative to the holographic recording material;  
 interfering the conditioned object beam with the reference beam at the selected elemental hologram.

Please add the following new claims:

63. (New) The apparatus of claim 36 wherein the removable band-limited diffuser is specifically designed for the wavelength of the light source.

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64. (New) The apparatus of claim 36 wherein each of the removable band-limited diffuser and the removable masking plate are located in respective positions such that the removable band-limited diffuser can be replaced with a second band-limited diffuser and the removable masking plate can be replaced with a second removable masking plate, wherein the second band-limited diffuser and the second removable masking plate allow recording of at least one of a larger elemental hologram, a smaller elemental hologram and a differently shaped elemental hologram.